

***NATIONAL WEATHER SERVICE WESTERN REGION SUPPLEMENT 17-2003  
APPLICABLE TO INSTRUCTION NWSI 10-701  
OCTOBER 24, 2005***

***Operations and Services  
Tsunami Warning Services, NWSPD 10-7  
Tsunami Warning Center Operations, NWSI 10-701***

***WESTERN REGION TSUNAMI WARNING OPERATIONS***

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**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives/>.

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**OPR:** W/WR1x4 (J. Lorens)

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***SUMMARY OF REVISIONS:*** This directive supersedes NWS Western Region Supplement 17-2003 dated September 27, 2004.

The following changes were made in this issuance:

1. Paragraph 2.1, Tsunami Watches and Warnings: Changed “should” to “will”.
2. Paragraph 2.2, Updates: Changed “may” to “will”.
3. Paragraph 2.5, Acknowledgment of TSUWCA products: Revised to limit acknowledgment to TEST messages only.

This supplement describes responsibilities and provides guidance to National Weather Service (NWS) offices in Western Region for planning and for taking action when there is a threat of a tsunami. It supplements instructions contained in NWSI 10-701.

<u>Signed</u>	<u>10/07/05</u>
Vickie Nadolski	Date
Director, Western Region	

<u>Table of Contents:</u>	<u>Page</u>
1. General .....	1
2. Tsunami Watch/Warning Products Dissemination .....	1
2.1 Watches and Warnings .....	2
2.2 Updates to Tsunami Watches/Warnings .....	2
2.3 Tsunami Advisories .....	2
2.4 "ALL CLEAR" .....	2
2.5 Acknowledgment of Initial Watches, Warnings, and Test Products .....	2

## Appendix

A. Example West Coast/Alaska Tsunami Watch/Warning/Advisory Products .....	A-1
B. Example West Coast/Alaska Tsunami Warning Cancellation .....	B-1

1. General: This Regional Supplement describes responsibilities and provides guidance to National Weather Service (NWS) Western Region (WR) Weather Forecast Offices (WFO) with coastal areas of responsibility (in California, Oregon, and Washington). WR WFOs with coastal areas of responsibility are responsible for planning for and taking appropriate action when there is a threat of a tsunami, including dissemination of tsunami watches and warnings. Coastal WFOs in WR are also responsible for ensuring the readiness of office staff and systems through routine operational drills and for coordinating community outreach activities to increase tsunami hazard awareness and to assist in emergency preparedness for tsunami events (e.g. promotion of the TsunamiReady program). State emergency offices (California, Oregon, and Washington) have the responsibility to develop warning procedures, plans and evacuations for local communities. WFOs should cooperate with these agencies and, where possible, aid in warning dissemination. Specific (localized) procedures will be included in WFO Station Duty Manuals.

2. Tsunami Watch/Warning Products and Dissemination: Tsunami product dissemination paths for the West Coast/Alaska Tsunami Warning center (WC/ATWC) are described at:

<http://wcatwc.arh.noaa.gov/Products/messagesumm-nolink.htm>

Specific message definitions for WC/ATWC products are provided at:

<http://wcatwc.arh.noaa.gov/Products/msgdefs.htm>

The WC/ATWC, located at Palmer, Alaska, is the official source of all tsunami watches, warnings, and supplemental information bulletins for WR WFOs. See Appendix A for an example Tsunami Watch/Warning/Advisory product (issued by WC/ATWC). The initial notification of the tsunami watch/warning will be transmitted by WC/ATWC to WFOs in California, Oregon, and Washington via AWIPS and also by voice announcement on the National Warning System (NAWAS). Tsunami Watches/Warnings will be handled and disseminated by WFOs with the highest possible priority. Concerning dissemination of tsunami watches/warnings on NOAA Weather Radio (NWR), the following procedures apply.

2.1. Tsunami Watches and Warnings: From the official WC/ATWC watch/warning (AWIPS product: TSUWCA), obtain specific information valid for the WFOs areas of responsibility. Tsunami watches and warnings may be manually recorded, but will be broadcast without delay, using appropriate SAME codes on NWR transmitters with coastal public and marine zone coverage (this will activate EAS as defined by the governing EAS plan). Tsunami watches and warnings may also be broadcast on transmitters covering inland areas, depending on local customer requirements. Minimum information in broadcast tsunami watches/warnings (as taken from the TSUWCA) will include:

- a. Effective area(s) for watches/warnings,
- b. Time, location, and magnitude of tsunami-generating earthquake, and
- c. Estimated times of arrival of tsunami at designated geographical points.

2.2. Updates to Tsunami Watches/Warnings: Updated Tsunami Watches/Warnings will be disseminated without delay.

2.3. Tsunami Advisories: In situations where the Pacific Tsunami Warning Center (PTWC), located in Ewa Beach, Hawaii, issues a tsunami watch and/or warning within its Area of Responsibility (AOR), but no warning or watch exists for the west coast (California, Oregon, and Washington, as determined by WC/ATWC), WC/ATWC normally will follow up by issuing a “Tsunami Advisory” for the west coast (also using the AWIPS header: **TSUWCA**). For earthquakes of magnitude 6.5 or greater, but remaining below warning threshold, a “Tsunami Information Bulletin” is normally issued (AWIPS header: **TIBWCA**). In either of these situations, WFOs may broadcast selected information over NWR contained within these bulletins, as needed for local customer requirements.

2.4. “ALL CLEAR”: The WC/ATWC is responsible for issuing tsunami watch/warning cancellation bulletins (also using TSUWCA) and final supplements, but local emergency management authorities are ultimately responsible for determining the final “ALL CLEAR”. An example tsunami warning cancellation bulletin (from WC/ATWC) is in Appendix B.

2.5. Acknowledgment of TSUWCA products: WFOs will acknowledge TEST messages transmitted by the WC/ATWC using the AWIPS product header: **TMAXXX** (where “XXX” = WFO identifier). In the Acknowledgment message, provide time of receipt (Z) of the TEST message, responding WFO name (or 3-letter WFO ID), and last name of individual responding. Because of the need for immediate dissemination during Tsunami situations, WFOs will not respond to actual WC/ATWC warnings and/or watches with the TMA.

APPENDIX A

**Example (Initial) Tsunami Watch/Warning/Advisory from WC/ATWC  
(TSUWCA)**

WEPA41 PAAQ 021938

TSUWCA

TO - TSUNAMI WARNING SYSTEM PARTICIPANTS IN  
ALASKA/BRITISH COLUMBIA/WASHINGTON/OREGON/CALIFORNIA  
FROM - WEST COAST AND ALASKA TSUNAMI WARNING CENTER/NOAA/NWS  
SUBJECT - TSUNAMI WARNING BULLETIN - INITIAL  
BULLETIN NUMBER 1  
ISSUED 06/02/2004 AT 1938 UTC

...A TSUNAMI WARNING IS IN EFFECT FOR THE COASTAL AREAS  
FROM POINT SUR-CA . TO LANGARA I.-BC. INCLUSIVE...

...A TSUNAMI WATCH IS IN EFFECT FOR THE COASTAL AREAS FROM  
THE CALIFORNIA-MEXICO BORDER TO POINT SUR-C. AND FROM  
LANGARA I.-BC. TO SITKA-AK...

...AT THIS TIME THIS BULLETIN IS FOR INFORMATION ONLY FOR  
OTHER AREAS OF ALASKA...

EARTHQUAKE DATA

PRELIMINARY MAGNITUDE - 7.2

LOCATION - 45.3N 124.0W - 95 MILES NW OF EUGENE-OR.  
70 MILES NW OF PORTLAND-OR.

TIME - 1130 ADT 06/02/2004  
1230 PDT 06/02/2004  
1930 UTC 06/02/2004

EVALUATION

IT IS NOT KNOWN - REPEAT NOT KNOWN - IF A TSUNAMI EXISTS BUT A  
TSUNAMI MAY HAVE BEEN GENERATED. THEREFORE PERSONS IN LOW  
LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR  
LOCAL EMERGENCY OFFICIALS. PERSONS ON THE BEACH SHOULD MOVE TO  
HIGHER GROUND IF IN A WARNED AREA. TSUNAMI WAVE HEIGHTS CANNOT BE  
PREDICTED. TSUNAMIS MAY BE A SERIES OF WAVES WHICH COULD BE  
DANGEROUS FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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PZZ130-131-133-134-132-135-150-153-156-110-250-210-255-350-  
353-356-450-455-550-530-535-555-WAZ001-002-005-006-007-008-  
009-010-011-013-014-015-016-021-ORZ001-002-021-022-CAZ001-  
002-005-007-006-075-074-009-022038-  
COASTAL AREAS FROM POINT SUR-CA. TO LANGARA I.-BC.  
INCLUSIVE.

**NWS WR SUPP 17 OCTOBER 24, 2005**

...A TSUNAMI WARNING IS IN EFFECT FOR THE COASTAL AREAS  
FROM THE POINT SUR-CA. TO LANGARA I.-BC. INCLUSIVE...

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL

CHARLESTON-OR	1331 PDT JUN 2	ASTORIA-OR	1402 PDT JUN 2
SEASIDE-OR	1332 PDT JUN 2	TOFINO-BC	1410 PDT JUN 2
CRESCENT CITY-CA	1351 PDT JUN 2	SAN FRANCISCO-CA	1502 PDT JUN 2
NEAH BAY-WA	1400 PDT JUN 2	LANGARA-BC	1505 PDT JUN 2

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PKZ032-031-042-034-033-035-041-036-PZZ555-670-673-650-655-  
750-AKZ023-024-025-026-028-029-027-CAZ009-034-035-039-040-  
046-041-042-043-022038-

COASTAL AREAS FROM CALIFORNIA-MEXICO BORDER TO POINT  
SUR-CA. AND FROM LANGARA I.-BC. TO SITKA-AK.

...A TSUNAMI WATCH IS IN EFFECT FOR THE COASTAL AREAS FROM  
THE CALIFORNIA-MEXICO BORDER TO POINT SUR-CA. AND FROM  
LANGARA I.-BC. TO SITKA-AK...

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL

SAN PEDRO-CA	1540 PDT JUN 2	LA JOLLA-CA	1554 PDT JUN 2
SITKA-AK	1452 ADT JUN 2	KETCHIKAN-AK	1518 ADT JUN 2

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PKZ176-175-172-170-171-155-150-132-136-138-137-130-141-140-  
120-121-129-127-125-126-128-052-051-053-022-012-043-013-  
011-021-AKZ191-185-181-171-145-111-101-121-125-131-135-017-  
022-018-019-021-022-022038-

COASTAL AREAS FROM SITKA-AK. TO ATTU-AK.

...TSUNAMI INFORMATION STATEMENT...

...NO - REPEAT NO - TSUNAMI WATCH OR WARNING IS IN EFFECT FOR  
THE COASTAL AREAS FROM SITKA-AK. TO ATTU-AK...

FOR INFORMATION ONLY - ESTIMATED TIMES OF INITIAL WAVE ARRIVAL

YAKUTAT-AK	1546 ADT JUN 2	SAND PT.-AK	1646 ADT JUN 2
JUNEAU-AK	1557 ADT JUN 2	DUTCH HARBOR-AK	1704 ADT JUN 2
KODIAK-AK	1611 ADT JUN 2	HOMER-AK	1721 ADT JUN 2
SEWARD-AK	1613 ADT JUN 2	COLD BAY-AK	1722 ADT JUN 2
VALDEZ-AK	1630 ADT JUN 2	ADAK-AK	1729 ADT JUN 2
CORDOVA.-AK	1640 ADT JUN 2	SHEMYA-AK	1810 ADT JUN 2

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THE PACIFIC TSUNAMI WARNING CENTER AT EWA BEACH HAWAII WILL  
ISSUE BULLETINS FOR OTHER AREAS OF THE PACIFIC.

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS  
WARRANT. THE TSUNAMI WATCH/WARNING WILL REMAIN IN EFFECT  
UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE  
[HTTP://WCATWC.ARH.NOAA.GOV](http://WCATWC.ARH.NOAA.GOV) FOR MORE INFORMATION AND ETA SITES.

APPENDIX B

Example Tsunami Watch/Warning Cancellation Bulletin  
(TSUWCA)

WEPA41 PAAQ 282300

TSUWCA

TO - TSUNAMI WARNING SYSTEM PARTICIPANTS IN  
ALASKA/BRITISH COLUMBIA/WASHINGTON/OREGON/CALIFORNIA  
FROM - WEST COAST AND ALASKA TSUNAMI WARNING CENTER/NOAA/NWS  
SUBJECT - TSUNAMI WARNING BULLETIN - FINAL  
BULLETIN NUMBER 10  
ISSUED 08/28/2005 AT 2300 UTC

...THE TSUNAMI WARNING STATUS IS CANCELLED FOR CALIFORNIA...

EARTHQUAKE DATA

PRELIMINARY MAGNITUDE - 7.6  
LOCATION - 19.2N 155.1W - HAWAII  
TIME - 0920 ADT 08/28/2005  
1020 PDT 08/28/2005  
1720 UTC 08/28/2005

A REGIONAL TSUNAMI WAS OBSERVED AT THE FOLLOWING SITES

KALAUPAPA, HAWAII 500CM/16.4FT  
HONUPO, HAWAII 150CM/4.9FT  
HILO, HAWAII 750CM/2.4FT  
LA JOLLA, CALIFORNIA 050CM/1.6FT

EVALUATION

NO TSUNAMI DANGER EXISTS FOR ALASKA - BRITISH COLUMBIA -  
WASHINGTON - OREGON OR CALIFORNIA. HOWEVER SOME AREAS MAY  
EXPERIENCE SMALL SEA LEVEL CHANGES. AS LOCAL CONDITIONS  
CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL  
CLEAR DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

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PKZ555-670-673-650-655-750-CAZ009-034-035-039-040-087-041-  
042-043-281848-  
COASTAL AREAS OF CALIFORNIA.

THE PACIFIC TSUNAMI WARNING CENTER WILL ISSUE A FINAL BULLETIN  
FOR OTHER AREAS OF THE PACIFIC.

THIS WILL BE THE LAST WEST COAST AND ALASKA TSUNAMI WARNING  
CENTER WATCH/WARNING BULLETIN ISSUED FOR THIS EVENT.  
THIS INFORMATION IS ALSO POSTED AT [HTTP://WCATWC.ARH.NOAA.GOV](http://WCATWC.ARH.NOAA.GOV).

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